

IMAGINE MARS CURRICULUM FOR CALIFORNIA HUD NN CENTERS

At-A-Glance

INTRODUCTION DAY				
Objectives	Activities	Presentation Cont.	Materials	Time
<ul style="list-style-type: none"> Students read and understand NASA challenge Students have opportunity to ask questions about project Students identify prior knowledge and curiosities about Mars Students get a taste of what Mars is like Students feel committed to project and a part of the team 	DAY 1 Students create “Mars Chart” Students sign Mission Team Agreement	None	<ul style="list-style-type: none"> Poster Board Markers 	1.5hr
REFLECT				
Objectives	Activities	Presentation Content	Materials	Time
<ul style="list-style-type: none"> Students understand the elements that are needed for a successful community. Students recognize the communities of which they are a part. Students identify what makes their community unique. Students identify why they like living in their community. Students identify what things they would change about their community. Students learn how to 	DAY 2 <i>Picturing our Community</i> Students take pictures with disposable cameras of what they like and don’t like about their community.	None	Disposable Cameras (one camera per 1-2 participants)	2 hr
	DAY 3 <i>Document in PowerPoint</i> Students upload digital images to PowerPoint and add words about why they like or don’t like the community element pictured.	2 slides for each student – pictures and explanations about what students will keep, what students will change.	Photos on Disc Computers with PowerPoint	2 hr
	DAY 4 <i>The People in Our Community</i> Students create a collage of all the people that are important to their home community. Students upload a digital picture	One slide (for the whole group) that includes a picture of the collage and explanation.	<ul style="list-style-type: none"> Magazines Glue Paper Markers Poster Board 	2 hr

incorporate photographs into a PowerPoint slide • Students consider the people who contribute to a successful community	of their collage to PowerPoint and create a single slide		• Digital Camera	
IMAGINE				
Objectives	Activities	Presentation Content	Materials	Time
• Students identify important values to a community and define the values on which their Mars community will be based. • Students begin to consider what a brand new community would be like. • Students understand the essential elements to a thriving and healthy community. • Students recognize ways that cultures define themselves: language, art, food, clothing, music • Students consider what “Mars Culture” will be like.	DAY 5 <i>Creating a Mission Statement</i> Students Create a Mission Statement for their community	1 slide with the team’s mission statement	• Examples of Mission Statements • Paper • Markers	2 hr
	DAY 6 <i>Creating a Name and Flag</i> Students name their community and create a community flag.	1 slide with community name and flag.	• Sketch Pad • Pencils • Crayons • Markers • Colored Pencils • White board/flip chart	2 hr
	DAY 7 <i>Culture on Earth and Mars</i> Students use internet to research specific cultures and the language, art, food, clothing and music that define them.		• Paper • Pencils • Printer • Printer paper • Map of the world	2 hr
	DAY 8 <i>Martian Language</i> Students create martian alphabet	1 slide with new martian alphabet, word examples	• Pens • Markers • Crayons • Paper • Digital Camera	2 hr
	DAY 9 <i>Menu for Mars</i> Students Create Martian Menu of food items that will sustain the first Mars inhabitants.	1 slide with menu and explanation.	• Menu Examples • Microsoft Word • Poster Board	2 hr
	DAY 10 <i>Clothing for Mars</i>	1 slide with images of spacesuits.	• Pencils • Paper	2 hr

	Students design spacesuits for Martian community.		<ul style="list-style-type: none"> • Crayons • Markers • Scanner or digital camera 	
	DAYS 11 and 12 <i>National Anthem on Mars</i> Students write Mars national anthem. Can be a rap or hiphop or reggae – whatever they wish. Students embed a music file into the powerpoint presentation.	1 slide with embedded sound file and lyrics.	<ul style="list-style-type: none"> • Pencil • Paper • Examples of national anthems • CD player • Musical Instruments • Computer microphone 	4 hr

DISCOVER

<ul style="list-style-type: none"> • Students Discover the Planet Mars and the challenges the environment will pose to human existence. • Students become “experts” and identify martian environment challenges • Students use their expertise to develop solutions for the first martian inhabitants. 	DAYS 13 – 17 <i>Becoming Martian Experts</i> Students will participate in a Mars Webquest: Students choose expert roles and research Mars. They then brainstorm and come up with solutions for the challenges the Mars environment will pose to human existence. They will answer: <ul style="list-style-type: none"> • Where their community is located – in a crater, at the poles, etc. • Their plan to protect from the harsh martian environment. • Their plan for food and water and oxygen. Day15 or 16 One or both of these sessions a Mars Expert from NASA will come to validate the students learning and ideas and to answer questions. Students will also be able to email their Mars Scientist “mentor” here at JPL with questions or concerns.	<ul style="list-style-type: none"> • Introduction slide with community Name. • Slides that explain where the community is located, • how it will be protected, • how they will have food,water and air. <p>These can be specified, or we can let students decide how to put them together themselves.</p>	<ul style="list-style-type: none"> • Computers with Internet Access – at least one per 2 students. • Copy of Mars Webquest (PowerPoint File) • Other Mars Materials provided in initial packet. 	2 hr/day
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CREATE

<ul style="list-style-type: none"> Students combine all that they have worked on and recognize a brand new community/culture that they have developed. Students finalize proposal to NASA to represent their vision of the first Mars community. Students build 3-dimensional model of their imagined community. 	DAYS 18-21 <i>Putting it All Together</i> <i>Finalize Presentation:</i> Students combine all of the slides into one presentation. Students create a title slide and a overall look for the presentation. <i>Create Model of Mars Community:</i> Using boxes, paint, paper etc. students follow their initial layout and build their 3-d community.	<ul style="list-style-type: none"> Finished PowerPoint proposal Finished 3-d model. 	<ul style="list-style-type: none"> Computers Pencils Markers Crayons Colored pencils Paper Toilet paper rolls Shoeboxes Other small boxes Glue Tape Paint Paint brushes 	2hr/day
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SHARE

<ul style="list-style-type: none"> Students will share their new knowledge, creativity and future vision with their local community and upload project to website. 	Days 22-23 Students present to their home communities and upload to Imagine Mars Gallery.		<ul style="list-style-type: none"> Laptop Computer Presentation Camera Video Camera 	
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DAY 1

INTRODUCTION TO IMAGINE MARS

Objectives:

Students read and understand NASA challenge
Students have opportunity to ask questions
Students identify prior knowledge and curiosities about Mars
Students get a taste of what Mars is like
Students feel committed to project and part of a team

Materials:

NASA challenge letter (attached)
Envelopes (for letter: addressed to each student)
Mission team agreement (attached)
Mission team badge (artwork attached)
Poster board
Markers

Prepare:

Organize hand-out materials
Have badges laminated or put in a badge sleeve
Review Guiding Questions
Review NASA challenge and prepare to answer questions

Procedure:

- **Review Letter:**

Tell students that they have received official correspondence from NASA and have been presented with a challenge. Present each student with his or her own official NASA letter (attached.) Have students open their documents together and have a student read contents out loud.

- **Clarify Challenge:**

Talk to students about NASA's challenge. Explain that they will be competing with other HUD NN centers across the country and that final results will be revealed at the National Conference in August.

Guiding questions:

Do you have questions about the proposal?
Can we do this? Can we win?

- **Open Mars Discussion:**

Begin brief discussion about Mars and the possibility of humans living there. There are no right answers here. This is to get students thinking, feeling confident and a part of the group. Acknowledge all responses.

Guiding questions:

Humans have never been to Mars, when do you think the first human will actually step on Mars?

Why would we want to go to Mars anyway?

Would YOU go to Mars if you had the chance? Why? Why not?

What do you think it would be like to live on Mars?

- **Activity:**

1. Draw a line down the middle of a large piece of poster board. At the top of one column write “things we know about Mars.” At the top of the other column write, “Questions that we have about Mars.” Explain to students that they are all explorers and that all of their questions are very important to the whole team. Explain that they need to become experts and to do that, all questions need to be asked.
2. Give each student a small stack of sticky notes. Give students 5-10 minutes to fill out as many as they can for each side of the poster board. Have students put sticky notes on the board as they finish them.
3. Once students are finished, read the completed lists. At this point make no comments. Even if information in the “things I know” is incorrect – the objective is for students to discover it on their own, or through the process. If student asks directly, advise them that you will have to figure it out together as you all learn more about Mars.
4. Explain that as the team works on this mission together they will be adding to both sides of the board – they will be learning more about Mars, but also having more questions. Encourage students to continue to put up sticky notes on the board as they learn more. Keep board posted in the room for each meeting.

- **Mission Commitment and Badge Distribution**

Explain that NASA wants mission experts who are committed to the mission. Ask students to think about whether they are willing to be a part of the team, to come to all of the mission planning sessions, and to give 100% of themselves. Tell students that when they are sure they are ready to join the team they should sign the mission team agreement and they will receive their mission team patch.



OFFICIAL NASA COMMUNITY PROPOSAL

NASA Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, CA 91001

June 26, 2007

Students in the Imagine Mars Program

Housing and Urban Development
Neighborhood Networks

Dear Students in the Imagine Mars Program:

NASA is planning for its first community on the planet Mars in the year 2030. We need your help. Your creativity and out-of-the-box thinking is what will make this a successful NASA mission.

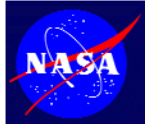
Your team is competing to design the best community on Mars for the first 100 inhabitants. You will each be assigned an important mission function and work together to plan the world of the future. Remember to follow the directions, and be creative. When your proposal is complete, NASA scientists, engineers and experts will review it – along with other students' work – and choose a proposal for their first mission to Mars. The proposal you submit to NASA must include the following:

- ✓ Your proposal must describe what elements of your current community you would like to take with you to Mars and what elements you would like to change.
- ✓ Your proposal must include a collage that defines who the people are in your community. What do they do? What are their characters like?
- ✓ Your proposal must include a mission statement describing how your community will work together and what their core values will be.
- ✓ Your proposal must include information about your community's flag, language, food, clothing and national anthem.
- ✓ Your proposal must explain where the community is located, how it will be protected and how you will provide food water and air.
- ✓ Your proposal must include a physical model of your community's layout and necessary buildings.

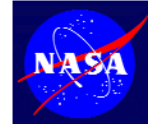
Because NASA scientists and engineers often must work under extreme pressure, you will only have until October 31, 2006 to learn about Mars and your community, brainstorm your ideas and complete your proposal

Best of Luck,

NASA SELECTION COMMITTEE CHAIR



MISSION TEAM AGREEMENT



I _____ understand that by signing this document I am becoming a part of the NASA mission planning team, designing a plan for the first martian community for 100 people. I promise I will attend all mission design meetings and will give my best effort at each session. If I cannot attend a meeting, I will let my team leader know ahead of time so that he/she can make other arrangements. I will support my team and use my talents to make our proposal the best it can be.

Signed: _____

Date: _____



DAY 2

REFLECT #1 - Picturing our Community

Objectives:

Students recognize the communities of which they are a part.

Students look at their community and identify what they like and don't like.

Students begin to reflect on their home community and what makes it unique

Materials:

Disposable Cameras (one camera per 1-2 participants)

Prepare:

Make sure cameras are purchased and ready

Consider route you will walk around complex

Gather volunteers to accompany youth on the walk – 1 instructor per 4-5 youth

Procedure:

- **Recap Previous Week**

Review Mars Information chart from last session

Read/Review official NASA proposal community requirements

Explain that before students can build a community on Mars they have to understand more about their community on Earth

Explain that they will be working on the first requirement for their final proposal:

1. Your proposal must describe what elements of your current community you would like to take with you to Mars and what elements you would like to change.

- **Discussion**

Ask students what the word "Community" means to them. Have a student find the definition of community on the internet and read to group – does the group agree with this definition? Guide students through a discussion about community.

Guiding Questions:

Of what communities are we a part?

What makes our community unique?

Why do you like living here?

What do you think should change?

What do you wish you had in your community?

Who are the people that make up a community?

- **Activity**

1. If necessary, give brief overview of how to operate cameras

2. Pass out cameras – 1 per 1-2 students

3. Explain to students that they will be using the cameras to document their community. For the next hour they will be taking pictures of the

elements they like about their community and the elements that they would like to change.

4. Explain that each student should take at least 10 pictures – some examples of things they like and things they would change.
5. Participants walk with the staff around the apartment complex and surrounding area for approximately 1 hour. Preferably 2-3 youth per instructor.

- **Recap**

1. When students return to center, have them partner with someone they didn't tour with and share what they found. What did they find that they liked and what would they like to change?
2. On large paper or posterboard write "COMMUNITY" make two columns – one labeled "what we like" one labeled "what we would change" have students fill in the columns, or report responses so that coordinator can write them in. Leave this posted in room.

DAY 3

REFLECT #2 – Documenting our Community in PowerPoint

Objectives:

Using their pictures, students create 2 PowerPoint slides. One slide documenting what they like and one slide documenting what they wish to change about their community.

Students learn how to incorporate photographs into a PowerPoint slide.

Materials:

Disks with photos on them – processed from photo shop.

At least 1 computer per 2 students.

Each computer should have PowerPoint or other presentation program software.

Prepare:

Have disks prepared from photo processing facility. One disk per camera

Ensure your own familiarity with PowerPoint and downloading photos from the disk to the individual slide.

Procedure:

- **Recap Previous Week**

Review “Community” chart

Guiding Questions

Did students see anything this week that they would like to add to chart?

Were students surprised by anything that they found during their tour?

Do students have any new thoughts about what makes their community unique?

- **Activity:**

1. Explain directions to students: They will receive their disk of pictures and insert it into the disk drive. They will open the PowerPoint application and begin a new presentation. They will name and save presentation as per the center's guidelines.
2. Review basic PowerPoint functions with students if necessary (attached is document with some basic instructions and links to online tutorials)
3. Guide students to choose a selection of their images – they may use all or some. Help students to create two slides each - one that defines what they like about their community and one that defines what they would change. Each slide should have images and words describing the images.

- **Recap**

Have students present their slides to each other.

PowerPoint Tips and How To

For more free information about using PowerPoint visit:

<http://www.mightycoach.com/articles/powerpoint/index.html>

To add pictures to PowerPoint from a file.

In using pictures and graphics with PowerPoint there are many, many features that you can use including cropping and enhancing colors as well as customizing the way pictures and text bars appear. But to begin one should first begin with the basics.

1. Open **PowerPoint**
2. A menu will open to the right for slide layout. Click a blank slide layout.
3. On the standard toolbar click **Insert** and choose **Duplicate slide**. Repeat for as many slides as you will need.
4. Click on an empty slide to the left.
5. From the toolbar click **Insert** and choose **Picture – From File**.
6. Choose the picture folder and picture file by clicking on them. This will insert the picture into your slide.
7. Use the mouse to resize and position the picture to fit the slide (you will need to hold down the control key to avoid skewing)
8. If picture does not fit the way you want it to you may choose to put a color or pattern in the **Background**. To access this feature you will . . .
9. Select **Format** from the toolbar and then **Background**. From the pull down menu choose predetermined colors or **More Colors** or **Fill Effects**.

To add text

1. Select **Insert** from the toolbar and choose **Text Box**.
2. With the mouse, position the pointer where you want to begin, use the left mouse button and drag open a text box. It can be resized and repositioned at any time with your mouse.
3. Select **Format** from the toolbar, and choose **Font**. This will allow you to determine the size, font and color of the font.
4. Type your text. Edit text, resize Text Box and reposition as needed with the mouse.
 - Resize text box by positioning mouse over box at the corners until you see an arrow (→) in the direction you want to resize
 - Reposition box by moving mouse over box until you see a symbol that looks similar to this one (?) and hold down left mouse button while you move it, the same is done for pictures.

DAY 4

REFLECT #3 – The People in Our Community

Objectives:

Students reflect on their own community members and discuss what type of community members they will want in their futuristic community on Mars.

Students address what type of people – character and job skills – make their community flourish.

Materials:

Magazines

Glue

Paper

Markers

Large piece of poster board

Digital Camera

Prepare:

Have various magazines and art supplies ready

Consider the answers to the Guiding Questions so that you can help students brainstorm.

Be prepared to help students transfer digital image onto computer and into PowerPoint presentation.

Procedure:

- **Recap Previous Week**

Review that last session students created slides that defined what kind of a community they wanted on Mars.

Explain that this session they will be deciding what types of people are important to their community here on Earth, and who will be important to their community on Mars.

Point out that students will be fulfilling the second requirement in their NASA proposal

- Your proposal must include a collage that defines who the people are in your community. What do they do? What are their characters like?

- **Discussion**

Initiate discussion about the people that make up a community

Document list on posterboard or other large paper in front of room

Guiding Questions:

Who is important in your home community? Why?

What roles must be filled for a community to sustain and flourish?

What roles must be filled for a community to be culturally rich?

(artists, musicians, storytellers, writers etc.)

What characteristics do contributing community members have?
(courage, integrity, kindness, work ethic, etc.)

- **Activity:**

1. Students work together to create a collage of all of the people that they have identified are important to their home community.
2. Students cut-out pictures/words from magazines or draw pictures so that everyone is represented in the collage.
3. When collage is finished, students take a digital picture of it and upload it onto the computer
4. Working together, students create one slide in PowerPoint that explains all of the people they feel are important to a successful community and an image of the collage. This is one slide for the whole group, not a slide per student.

DAY 5

IMAGINE #1 – Creating a Mission Statement

Objectives:

Students will review the content from the previous session and consider how their new community on Mars will function.

Students will identify the values their martian community will be based on
Students will write a basic mission statement identifying those core values and the overall purpose of their Mars community.

Materials:

Examples of Mission Statements

Paper

Markers

Prepare:

Find examples of Mission Statements on the web.

Procedure:

- **Recap from Last Session**

Review the last session's activities: What did they decide they liked and didn't like about their home community? How might this affect their community on Mars?

Review the types of people that make up their community and are important to a sustainable community. What characteristics do they have?

Explain that for the last few sessions they have been REFLECTING on their home community – Answering questions about what it is like and what kind of people live there. This week they get to start IMAGINING!

They are now preparing their community on Mars and will use what they've learned to decide not only what the community is like and who lives there, but what values and rules the community has.

- **Discussion**

Remind students that they are building a brand new community on Mars and it can be any way they want it to be. Ask students to consider some of the rules and values that their current community has, or doesn't have, and what they would like for their new community on Mars. Have students talk in pairs about what values they'd like their martian community to have. Allow the pairs to share and then discuss.

Guiding Questions

What are important rules or values that you want your community to have?
Do we have those rules/values in this community on Earth?

What are some of your dreams for how people in the Mars community will behave and treat each other?

What would make the Mars community an undesirable place to live?

How can you turn the undesirable elements into positive elements?

Explain that sometimes communities or corporations develop Mission Statements to sum- up the values of a community and define it. Share some examples of community or corporate mission statements. Explain that today students are going to create a mission statement for their new martian community based on the values and rules they just identified.

- **Activity:**

1. Using the information that comes out of the discussion, ask students to write down value words or key phrases on sticky notes defining the core values and/or rules of the new martian community.
2. Students put the sticky notes on a large piece of paper or poster board (you may also choose to type them directly into the presentation).
3. Using the defined words and phrases, have students work together to build a simple mission statement.
4. Finish by creating a PowerPoint slide with the community's mission statement.

- **Recap**

Ask students "who would want to live in this new community?"

What are ways that we could make our current community more like this Mars community?

DAY 6

IMAGINE #2 – Creating Community Name and Flag

Objectives:

Students will give the community an identity by giving it a name and creating a flag.

Students will explore symbols and how they represent a communities culture or values.

Materials:

Sketch Pads

Pencils

Crayons

Markers

Colored Pencils

White board/Flip chart

Prepare:

Research what your community name means, or how it came to be.

Research what your state flag is and what the symbols mean.

Procedure:

- **Recap from Last Session**

Review the last session's activities: What did they decide they liked and didn't like about their home community? How might this affect their community on Mars?

Review the types of people that make up their community and are important to a sustainable community. What characteristics do they have?

Explain that for the last few sessions they have been REFLECTING on their home community – Answering questions about what it is like and what kind of people live there. This week they get to start IMAGINING!

They are now preparing their community on Mars and will use what they've learned to decide not only what the community is like and who lives there, but what values and rules the community has.

- **Discussion/Intro activity**

Discuss why a name is important in giving a community or a company or even a person a sense of identity.

Guiding Questions:

What does your community name mean to you? What does it make you think of? Why was it named that?

Would you rather live in a place called: "Lowly Lost Acres" or "Rising High Estates?" Why? What does each make you think of?

Would you rather work at a company called "Pretty Good Prices" or "Sensational Sales" why?

Have students work in pairs to come up with a few examples of their own. Let them share with the class and allow class to pick which name is best.

- **Activity:**

1. Students brainstorm names for their Mars community – what do they want the name to represent?
2. Record suggestions on white board or flip chart
3. Students vote on community name
4. Students work in pairs to develop concept ideas for the martian flag. Flag should contain symbols that represent the values of the community. (show examples if available)
5. Students present concepts and vote on, or create a flag for the community.
6. Pick one person to draw the flag on large white board or poster board with pencil. Then whole group finalizes.
7. Take a digital picture of the flag and load it onto the computer.
8. Students create one PowerPoint slide that identifies their Mars community name and flag.

****Extra – if you have extra time, have students create a large mural with the community name and flag displayed – this can be hung up in the community center for each Imagine Mars meeting.**

DAY 7

IMAGINE #3 – Culture on Earth and Mars

Objectives:

Students will use the internet to explore the cultures of different world communities.

Students will consider what the culture of the new Mars community might be like.

Materials:

Paper/Notepads

Pencils

Printer

Printer paper

Map of the World:

<http://www.lib.utexas.edu/maps/world.html>

http://go.hrw.com/atlas/norm_hm/world.htm

Prepare:

Research websites that have cultural information (Music, Language, Art, Food and Clothing) for different parts of the world.

<http://thinkquest.org/library/index.html>

Consider key search terms to help students conduct their searches on a search engine like Google or Yahoo (<http://google.com> <http://yahoo.com>)

Here are some examples of what we found with the search terms: Food, Africa

<http://www.sallys->

[place.com/food/ethnic_cusine/africa.htm](http://www.sallys-place.com/food/ethnic_cusine/africa.htm)

<http://www.africanchop.com/chopgl.htm>

Procedure:

- **Recap from Last Session**

Review your community name and flag.

Review that you now have a community name, flag and mission statement

- **Discussion/Intro activity**

Discuss the importance of “culture” to a community’s identity. Investigate the elements that define a community’s culture.

Guiding Questions:

What kinds of things make up the “culture” of a community?” – ex: music, art, language, clothing, etc. . . . elicit this list from students.

Who can name some of the cultural elements of other parts of the world?

Examples: In Mexico they speak Spanish and eat certain foods. . .

In Iran many women wear burkas to cover their heads and face.

Ask students to list some places in the world that they would like to know more about. Write these somewhere where all can see.

- **Activity:**

1. Explain that today students are going to investigate cultures in other parts of the world in order to decide what they want their Mars culture to be like.
2. Have students break into five groups (this might be all single students, or all pairs, or some pairs and some individuals depending on the size of your group)
3. Allow each group to choose music, language, art, food or clothing so that every element is represented.
4. Each group should then choose a location from the discussion time.
5. Advise students to spend some time using the internet to research their cultural element for a particular location. Direct students to pre-determined websites, or help them to do searches in Google/Yahoo.
6. Once students have found some information, advise them to create a summary of what they've learned in a word document. They will share this with the group when complete.
7. Word document should have pictures and explanations about the cultural element and the particular location.
8. Have each group share and discuss the differences. Also, what might the other cultural elements be like for each location?

- **Recap**

Explain that for the next few sessions students will be designing the Language, Food, Clothing, and Music for their martian community.

DAY 8

IMAGINE #4 – Martian Language

Objectives:

Students will create a new alphabet for their martian community

Materials:

Pens, Markers, Crayons
Paper

Prepare:

Research and print out examples of different alphabets from websites (remove the name of the language from the page)

Russian - <http://www.friends-partners.org/oldfriends/language/russian-alphabet.html>

Greek - <http://www.keyway.ca/gif/greek2.gif>

Sign Language - <http://www.usm67.org/alphabet/images/alphabet.jpg>

Latin -

Egyptian -

Chinese -

Japanese -

Use index cards or paper to write each of the alphabet's language origin - make three copies.

Procedure:

- **Recap from Last Session**

Explain that you will be creating new examples of the cultural elements you talked about last session. Ask students to remember what four key elements you were focusing on (Language, Food, Clothing and Music). Explain that today you will be creating a new martian language.

- **Discussion/Intro activity**

Display the examples of different alphabets that you found from the internet. Do not post what the language is. Put students into three teams. Each team receives a set of the language cards and must work together to decide which language they think each alphabet comes from. Discuss.

Guiding Questions

Why is language important to culture?

Why are there so many different languages?

What languages do people speak in our community?

What language will we speak on Mars?

As a group, decide whether you will use symbols, letters or signs for the new martian alphabet. Discuss the benefits of each. Encourage students

to research more languages on internet, or to model their new alphabet on other existing languages.

- **Activity:**

1. Have students work in pairs.
2. Assign each pair a set of letters from the alphabet.
3. Using paper, pencils, pens, crayons, whatever works, give students time to develop the new alphabet.
4. When all the student groups have completed their section of the alphabet, create a formal display alphabet. Take a digital picture of this, or scan it into computer.
5. Have students write some “notes” to each other using the new alphabet.
6. Create a slide in PowerPoint that showcases the new martian language – include digital picture, word examples, etc.

DAY 9

IMAGINE #5 – Menu for Mars

Objectives:

Students will create a Menu for their martian community

Students will consider a balanced diet and what foods they will need to sustain themselves on Mars.

Students will note different foods in different cultures around the world, and consider which they would like to take with them.

Materials:

Restaurant menu examples – can be found on internet, or from actual restaurant. (try to have a variety of food types, Mexican, Chinese, Homestyle, etc.)

Microsoft Word – within the “Project Gallery” there is a “Menu” template

Large piece of poster board, or large place to write in front of class

Prepare:

Acquire Restaurant Menu Examples

Ensure that you have Microsoft Word on the computer

Make two columns on board or poster board – label one : “Anytime food” the other “sometime food”

Procedure:

- **Recap from Last Session**

Ask students to remember what four key elements you are focusing on (Language, Food, Clothing and Music). Explain that today you will be focusing on the food you will eat on Mars and will create a new martian menu.

- **Discussion/Intro activity**

Display the examples of different menus you found from the internet and/or local restaurants. (you could let students explore the web to find their own websites. . . up to instructor) Let students explore. Discuss.

Guiding Questions

What cultures are represented by the menus today?

Why is food important to a culture?

Can you think of any food specific to a culture that is not represented here?

What kind of food is common to our culture? Our time?

What food might we eat on Mars?

Explain that food's primary role in our life is to nourish our bodies, help us grow and keep us healthy. Point out that some foods are good for us and can be eaten “anytime” while other foods are not as good for us and should be eaten only “sometimes.” Have students give examples of “sometimes” and “anytime” foods.

Put students into pairs

Assign one menu per student pair

Have students identify the items in the menu as “anytime” or “sometime” foods.

Each student pair should place 3 or 4 items from their menu on the chart at the front of the room in the appropriate category.

Discuss the student’s decisions. . .

- **Activity:**

1. Assign each student pair a different section of a typical menu: Appetizers, Entrees, Sides, Dessert, Drinks, Salads. . . (Adjust for the number of students you have, but ensure that you include entrees, drinks, Dessert)
2. Explain that students are designing a menu for the first Mars inhabitants. Explain that most of the food the first “martians” will eat will be food that they bring with them –so this menu must be diverse enough and interesting enough to keep everyone happy. Also remind students that there must be plenty of foods from the “anytime” category to keep the first mars inhabitants healthy.
3. Give students time to come up with their menu items – using paper, pens, markers, whatever is available.
4. Have students work together to use Microsoft word to complete their finished menu.
5. Create one slide in PowerPoint that highlights the menu and explains a little about the choices the students made.

- **Recap**

What did students consider as they were choosing foods to put in the menu?

Were there any foods that they wanted to include but didn’t? Why not?

What is different or special about the food they chose to take to Mars from the food that they regularly eat here on Earth?

DAY 10

IMAGINE #6 – Clothing for Mars

Objectives:

Students will create clothing for the people in the first martian community

Students will consider extreme environments on Earth and how the clothing people wear protect them.

Students will consider the environment on Mars and how the clothing will have to protect humans.

Students will note different clothing types in different cultures around the world, and consider which they would like to take with them.

Materials:

Pencils

Paper

Crayons

Markers

Prepare:

Identify websites with environment-inspired clothing examples from around the world. Some examples:

India - <http://www.cuisinecuisine.com/CultureClothing.htm>

Greenland – http://www.rmv.nl/publicaties/2groenland/e/pub_bot.html

Korea - <http://www.lifeinkorea.com/culture/clothes/clothes.cfm>

China - http://library.thinkquest.org/20443/g_clothing.html

Saudi Arabia - <http://www.topics-mag.com/internatl/dress-saudi-ar.htm>

Procedure:

- **Recap from Last Session**

Ask students to remember what four key elements you are focusing on (Language, Food, Clothing and Music). Explain that today you will be focusing on the clothing you will wear on Mars and will create a new martian costume or spacesuit.

- **Discussion/Intro activity**

Have students work in pairs. Give them 10 minutes to explore one of the sites you have already identified, or direct them to search for information about traditional clothing in a particular part of the world. Come back and discuss.

Guiding Questions

What did you find out about the clothing of another culture?

What can you share about how the clothing is designed for the environment in which the people live?

What kind of clothing is common to our culture?
How does it protect us from the environment?
What kind of clothing might we need to wear on Mars?

Explain that clothing's primary role (before heat and air conditioning) was to protect us from the environment. Explain that on Mars, the temperature is EXTREMELY cold and the atmosphere has no oxygen to breathe. Remind students that the first people on Mars may spend a lot of time enclosed in buildings that provide normal temperatures and oxygen levels, but that sometimes they will need to explore outside.

Explain that like people who live in more extreme parts of the world, the first people on Mars will have to have special clothing to protect them from the harsh environment. But, also like people in other cultures, and here in California, clothing is a way we express ourselves, and the new martian clothing should express something about the new community.

- **Activity:**
 1. Have students work in pairs
 2. Have each student pair design either an entire outfit, or an element of clothing for the first martian citizens.
 3. Ensure that students can explain whether this clothing is appropriate to wear inside or outside.
 4. Scan pictures, or use digital camera to take pictures and load onto computer.
 5. Create one slide in PowerPoint highlighting the martian clothing and explaining how it functions.
- **Recap**

What did students consider as they were designing clothing for the first Mars inhabitants?
Were there any types of clothes that they wanted to include but didn't?
Why not?
What is different or special about the clothes they chose to take to Mars from the clothes that they regularly wear here on Earth?

DAY 11

IMAGINE #7 – National Anthem on Mars

Objectives:

Students will consider the music that is traditional to different cultures
Students will listen to national songs from other cultures
Students will listen to and consider the United States National Anthem
Students will consider how a National Anthem reflects the values of a community/culture
Students will create their own National Anthem for Mars.

Materials:

Pencil
Paper
Computer
Examples of National Anthems/Traditional Music

Prepare:

Identify websites with sound clips of traditional music, and/or national anthems.

<http://david.national-anthems.net/>

<http://www.national-anthems.net/index.html>

Procedure:

- **Recap from Last Session**

Ask students to remember what four key elements you are focusing on (Language, Food, Clothing and Music). Explain that today you will be focusing on the music you will hear on Mars and will create a new martian national anthem.

- **Discussion/Intro activity**

Have students work in pairs. Give them 10 minutes to explore the websites you have already identified. Have each pair listen to and think about at least 3 different countries National Anthems. Bring students back together to discuss.

Guiding Questions

What key elements did you find to be the same in all of the anthems? (they sound proud, they talk about how great their country is, etc.)

What do you think the point of a national anthem is?

What do we want our Mars national anthem to say about our community?

- **Activity:**

1. As a group, list some of the elements, values, important points that you think the anthem should reflect.
2. Working as a group use these key words to write the lyrics to your anthem. You can talk about music now, but focus on the words.
3. This might take more than one meeting period.

- **Recap**

What kind of music would you like your anthem to be set to?

Ask students to bring examples of music to the next session.

If any students are musical, invite them to bring their instrument with them or to compose music for the anthem.

DAY 12

IMAGINE #8 – National Anthem on Mars Part 2

Objectives:

Students will complete their Mars national anthem.

Students will determine the music to use behind their anthem and will create a PowerPoint slide highlighting their anthem.

******Students work with musical professional to write music for anthem.

Materials:

Copies of National Anthem Lyrics

A CD player to listen to music examples

Musical instruments – if available.

A microphone to record directly into PowerPoint

Prepare:

Print copies of the Anthem lyrics so each student has one.

*******Consider bringing in a music expert to help students write the music to their anthem.

Procedure:

- **Recap from Last Session**

As a group, review the anthem lyrics you have come up with.

- **Discussion/Intro activity**

Have students present any music examples they have brought with them.

To keep time under control allow each student one example.

Discuss the different music styles, ideas and vote on what to use for the anthem. (rap, jazz, hip-hop, march etc)

- **Activity:**

1. Students work together to come up with a melody/beat for their anthem. (******preferably students have the aid of a professional musician/composer)

2. Students record their anthem into PowerPoint.

3. Students complete one PowerPoint slide highlighting their national anthem – including an embedded sound file.

DAYS 13 - 17

DISCOVER – Becoming Martian Experts

Objectives:

Students discover the planet Mars and the challenges the environment will pose to human existence.

Students become “experts” and identify martian environment challenges.

Students use their expertise to develop solutions for the first martian inhabitants.

Materials:

Computers with Internet Access – at least one per 2 students

Copy of Discover Webquest (available online with “Cultural Presentation” materials)

http://imaginemars.jpl.nasa.gov/getstarted/peer_activity_plans.html

Prepare:

Instructor should become very familiar with the WebQuest to help students through. (**note, PowerPoint must be viewed in “slideshow” mode for the links to work.)

Prior to the session, instructor should actually participate in the webquest, examine websites, answer questions, so that they might be of most benefit to their students.

Procedure:

Students will be participating in a WebQuest to learn about Mars. This PowerPoint presentation is designed like a website and will guide students to specific websites to learn about Mars. Students will take-on expert roles and answer specific questions. The WebQuest provides all the information and direction for the next 5 sessions.

- **Recap from Last Session**

On the first day of the Discover section: Explain to students that they are officially entering martian training. Now that they know about the culture of their new community they need to learn about the environment.

On future days of the Discover section: Recap what students worked on previously and review the next step of the webquest. Answer questions and guide students to next steps.

This will be the time to add items to the Mars Chart – “What we Know about Mars” and “Questions We Have About Mars”

- **Discussion/Intro activity**

As students work in pairs to learn about Mars encourage them to share what they are learning with each other. They will be focusing on specific

elements, but should use this time to share what they've learned and ask each other questions.

Guiding Questions

What challenges are we dealing with on Mars?

Do you think you would want to go to Mars? Why? Why not?

Do you think humans will be able to get to Mars eventually?

What do you think the biggest challenge is to life on Mars?

What is something you've learned that is opposite of what you thought to be true?

- **Activity:**

1. Students work on MarsQuest

- **Recap**

Review what students have learned/investigated

Add questions or answers to the Mars board.

DAYS 18 - 21

CREATE – Putting it All Together

Objectives:

Students combine all that they have worked on and recognize a brand new community/culture that they have developed.

Students finalize proposal to NASA to represent their vision of the first Mars community.

Students build 3-dimensional model of their imagined community.

Materials:

Computers – 1 per 2 students

PowerPoint software on at least one computer

Pencils

Markers

Crayons

Colored pencils

Paper,

Toilet paper rolls

Shoeboxes

Other small boxes

Other material that might be helpful for building a model

Glue

Tape

Paint/brushes

Plastic people, cars, stop signs, trees, swing sets etc – these can be found at a craft store.

Prepare: *Over the next 5 sessions you will have a lot to prepare/organize*

- Find a local place to give final presentation – check with apartment manager, community organizations, City Hall, or local school.
- Ensure that you have a laptop computer for final presentation – or that the presentation facility has a projection system.

Procedure: *Over the next 5 sessions half of the students will be putting the final PowerPoint presentation together while the other half of the students will build a physical model of their martian community out of boxes and other materials. You may choose to have students alternate so that they can work on both projects.*

- **Recap from Last Session**

Use this time to reflect on what has been accomplished and what still needs to be finished. You may consider keeping a “to do” list that students check off as elements are completed.

- **Activity:**

Day 17 - - JPL will try to find a Mars Expert to support this day.

- Separate into 2 groups: PowerPoint and model. (Powerpoint people can keep notes while model group is discussing).
- Discuss what you've learned about the environment on Mars and how a person would be affected by this atmosphere. Discuss how you will protect the community from the Martian atmosphere: underground, in a bubble, etc.
- Discuss how we will be able to get water to the community and how it will be stored.
- Discuss if community would be a city-atmosphere w/a lot of tall buildings together and housing to house many people or a small town with minimal buildings.
- Discuss what kinds of buildings will be needed – what community elements need to be represented? Hospital, School, museum, farmland, housing, etc.
- Draw a picture of what the community will look like for model.
- Identify additional materials needed to build model.
- Pass out Permission slips for JPL if planning on attending.

Day 18

- Begin building community model.
- PowerPoint group work on final presentation

Day 19

- Continue to build community model.
- PowerPoint group continue to work on final presentation

Day 20

- Finish model
- Finish PowerPoint presentation

Day 21

- Practice Presentation
- Decide who will speak
- Decide who will run the slides
- Go step by step through slides to allow presenters to practice what they will say. Do this several times
- Identify and gather any physical items that you will want to also share during the presentation
- Practice speaking about the model and explaining the elements/buildings/layouts you chose and why.

DAYS 22 - 23

SHARE – Sharing Your Creation!

Objectives:

Students will share their new knowledge, creativity and future vision with their local community.

Materials:

Laptop computer

PowerPoint presentation – on CD or other portable file system

Camera

Video camera

Prepare:

- Arrange for refreshments at local presentation
- Set up screen, computer, microphones, test all

Procedure: *Students will be giving their final presentations*

- **Activity:**

- Have students practice presentation.
- Confirm where they will stand, level of voice, microphone skills etc.
- Students give presentation – remember to smile! 😊